REMARKS

Claims 1, 3-22 and 24-49 are presently pending in this application. By this amendment independent claims 1 and 22 are amended. Support for the amendment can be found in the originally filed specification at paragraphs [0019]-[0021]. Reconsideration is respectfully requested.

Objections to the Specification

The specification is informally objected to for a misspelled name at page 4, line 11.

Applicants have amended the specification as indicated by the Examiner.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the objection to the specification.

Allowable Subject Matter

The Examiner has indicated that claims 3-8, 12, 18-20, 24-29, 41 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten into independent form.

Rejected Claims

Claims 1, 9, 11, 13, 15, 16, 21, 22, 30-34, 37, 38, 40, 42, 44-46, and 49 are rejected over the Cheatle reference. Claims 1 and 39 are rejected over the Cheatle and Porter references. Claims 14 and 43 are rejected over the Cheatle and Shiau references. Claims 17 and 47 are rejected over the Cheatle and Wang references. Claim 35 is rejected over the Cheatle and Parker references. Claim 36 is rejected over the Cheatle and Luo references. Reconsideration is respectfully requested.

The Examiner relies on Cheatle to teach measuring entropy as "busy-ness," center distance, and area ratio of image regions to determine likelihood of user interest at paragraphs 108-113, 133-137, 140, 154, and 155. However, as further explained below, Cheatle uses higher entropy of an image region candidate, if at all, as an indication of lower likelihood of user interest. This is a significant difference, especially where Cheatle teaches away from the claimed invention, especially as amended.

Cheatle uses salience (i.e., unusual color, intensity, or texture) to identify potential areas of interest, with cropping borders at low salience columns and rows bounding the high salience regions. Thus, a number of candidate regions are produced. Then, characteristics of the edges of each candidate region are evaluated to rank the candidate regions. These characteristics include activity (i.e., color differences), which the Examiner appears to interpret as "busy-ness" or "entropy." Lower "activity," interpreted by the Examiner as entropy, at the edges results in a lower penalty, and thus a better candidate. Thus, the Examiner appears to interpret Cheatle as using unusualness of a feature in the image in combination with low "entropy" at borders around the feature to measure likelihood of user interest in the candidate region. But Cheatle equates lower "entropy" at the edges with greater likelihood of user interest as discussed above and as further discussed below.

The Examiner relies on Porter to teach using vectors calculated from wavelet transform to represent texture information (Abstract). The Examiner relies on Shiau to teach transforming an image in RGB format into HUV format at col. 5, line 64-col. 6, line 23. The Examiner relies on Wang to teach pre-processing an image to eliminate noise in blurred text histograms to smooth the image at paragraphs 0040-0041. The

Examiner relies on Parker to teach transmitting a selected image region candidate absent image contents external to the selected image region at paragraph 0027. The Examiner relies on Luo to teach zooming in on an image region candidate at paragraph 0022.

Applicants' claimed invention focuses on a camera that uses entropy (and, in some cases, center distance and area ratio) to assess likelihood of user interest in image regions. The entropy (richness of colors, amount of information content) is determined based on a histogram of the image region candidate as expressed in claim 8. Higher entropy of the image region candidate yields a lower cost as expressed in claim 3. Thus, the higher the entropy, the greater the assessed likelihood of user interest as detailed in paragraphs 0019-0021 of the originally filed specification. For example, independent claim 1, especially as amended, recites, "said region of interest suggestion engine measures entropies of the image region candidates and uses entropy thus measured as a measure of likelihood of user interest, including determining that a region having higher entropy has a greater likelihood of being more interesting to the user than a region having lower entropy." Independent claim 22, especially as amended, recites similar subject matter.

Even if the Examiner's interpretation of the Cheatle reference is assumed accurate, the amended claims would still distinguish over the teachings Cheatle. In particular, Cheatle apparently uses higher entropy of image candidate edges as an indication of decreased likelihood of user interest in the image region candidate. It should be noted that the lower entropy at the edges of a first candidate compared to a second candidate does not serve as an indicator of higher entropy in a center of the first

candidate compared to the second candidate. Nor does the presence of an unusual feature in the center of a candidate indicate that higher entropy is present in the candidate compared to another region not considered as a candidate for lack of an unusual feature. Moreover, Cheatle would rank a first image region candidate having less entropy at the edges as of more interest to the user than a second image region candidate containing the same unusual feature as the first image region candidate. In other words, Cheatle uses entropy, if at all, to select between candidates for cropping around an unusual feature, and Cheatle does so by seeking to decrease the total entropy of the cropped image region containing the unusual feature. Accordingly, the amended claims should distinguish over the teachings of the primary reference, Cheatle. The Examiner does not rely on any of the other cited references to teach this subject matter or similar subject matter. Thus, Cheatle in view of Porter, Shiau, Wang, Parker, and/or Luo fail to teach, suggest, or motivate all of the limitations recited in the independent claims. These differences are significant.

Accordingly it is respectfully submitted that the claims are now allowable over the cited art. Reconsideration and allowance is therefore respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner

believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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